

IN THE SPECIFICATION:

On page 1, after the title, insert the following heading:

BACKGROUND OF THE INVENTION

On page 1, lines 1-2, amend the paragraph to read as follows:

The invention relates to a tubular reactor for catalytic gas phase reactions ~~according to the concept of patent claim 1.~~

On page 3, line 17 to page 4, line 36, amend the paragraph to read as follows:

Finally, it is known from the U.S. Patent No. 4,127,389, ~~which is the basis for the concept of claim 1,~~ to design the gas inlet and gas outlet hoods together with the associated tube plates as individual chambers within the reactor housing where said chambers are essentially surrounded on all sides by stream-calmed heat carriers. For this purpose, an unsealed plate penetrated by the contact tubes is located at a distance and parallel to each tube plate, where the one on the gas inlet side carries an insulation layer made of cast refractory material. This is a relatively narrow

endothermic high-temperature reactor, whose heat carrier may exhibit a temperature of between 1075 and 870 1C and is, therefore, definitely in a gaseous state. Furthermore, the pressure difference between process gas and the heat carrier may be just about 7 bar at the most. Accordingly, the tube plates together with their suspensions can be made relatively light in weight. If they had to carry the liquid heat carrier in addition to the weight of the tubes, then the usual immediate anchoring at the reactor jacket would be unavoidable. This applies particularly for reactor designs with a comparatively great diameter and many tubes.

On page 4, after line 12, insert the following heading:

SUMMARY OF THE INVENTION

On page 4, delete lines 20-22 and insert the following paragraph:

~~This objective is essentially achieved through the characteristic features of claim 1 subject to the invention. The subclaims offer additional advantageous design options.~~

This objective, as well as other objectives which will become apparent from the discussion that follows, are achieved, in accordance with the present invention, by an improvement wherein the two tube plates are anchored in an essentially known manner at their edges to the reactor jacket in a sealed manner and wherein the heat insulation zone includes a chamber containing a solid, liquid or gaseous heat insulation material or components that are stream-calming with respect to the heat carrier.

On page 5, delete lines 11-13 and insert the following paragraph and heading:

~~Some preferred exemplary embodiments of the respective tubular reactor are described in greater detail below based on the drawings, wherein~~

For a full understanding of the present invention, reference should now be made to the following detailed description of the preferred embodiments of the invention as illustrated in the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

On page 5, lines 14-22, amend the paragraphs to read as follows:

Fig. 1 shows schematically a longitudinal section through a tubular reactor according to the invention in a first embodiment together with connecting elements<sub>7</sub>.

Fig. 2 shows schematically a longitudinal section through an end section at the gas inlet side of such a tubular reactor, in a variation of the embodiment of Fig. 1<sub>7</sub>.

Fig. 3 shows schematically a longitudinal section through an end section at the gas inlet side of a tubular reactor as in Fig. 1, in a different variation of the embodiment of Fig. 1<sub>7</sub>.

On page 6, lines 1-3, amend the paragraph to read as follows:

Fig. 4 shows schematically a longitudinal section through an end section at the gas inlet side of a tubular reactor according to the invention in a specific embodiment, ~~and~~.

On page 6, after line 6, which have been inserted pursuant to the Preliminary Amendment filed August 16, 2000, please amend the paragraphs to read as follows:

Fig. 6 shows schematically a longitudinal section through an end section at the gas inlet side of a tubular reactor according to the invention in still another specific embodiment.

Fig. 7 shows schematically a longitudinal section through an end section at the gas inlet side of a tubular reactor according to the invention in still another specific embodiment.

Fig. 8a is a possible cross-sectional view of the tubular reactor, taken along the line VIII-VIII in Fig. 5, showing a honeycomb configuration.

Fig. 8b is a possible cross-sectional view of the tubular reactor, taken along the line VIII-VIII in Fig. 5, showing a concentric ring structure.

On page 6, lines 7 and 8, which have been inserted  
pursuant to the Preliminary Amendment filed August 16, 2000,  
please amend the paragraph to read as follows:

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention will now be described with reference to Figs. 1-5 8 of the drawings. Identical elements in the various figures are identified by the same reference numerals.

On page 10, after line 20, which have been inserted  
pursuant to the Preliminary Amendment filed August 16, 2000,  
please amend the paragraphs to read as follows:

The components 84 in the shape of honeycombs are illustrated in Fig. 8a; whereas the components 84 in the shape of concentric ring structures are illustrated in Fig. 8b.

Fig. 6 shows still another embodiment of the tubular reactor according to the invention having a heat insulation zone in the form of a chamber in the gas inlet side of the reactor. The gaseous or liquid heat insulation material in this chamber is prevented from circulating by means of structures installed in the chamber.

Finally, Fig. 7 shows still another tubular reactor of the type illustrated in Fig. 4 in which a partial stream of the heat carrier 32, 34 circulating around the contact tube bundle is bled off through lines 33a and 33b and used as the liquid or gaseous heat insulation material.

On page 11, after the last line, insert the following paragraph:

There has thus been shown and described a novel tubular reactor for catalytic gas phase reactions which fulfills all the objects and advantages sought therefor. Many changes, modifications, variations and other uses and applications of the subject invention will, however, become apparent to those skilled in the art after considering this

specification and the accompanying drawings which disclose  
the preferred embodiments thereof. All such changes,  
modifications, variations and other uses and applications  
which do not depart from the spirit and scope of the  
invention are deemed to be covered by the invention, which  
is to be limited only by the claims which follow.